

EXPLORATION TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 25, 2004

OK

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist III/Inspector, Team Lead *PHH by ar*

FROM: *SMF* Steve M. Fluke, Environmental Scientist II/Reclamation Hydrogeologist

RE: Minor Coal Exploration, SITLA Muddy Tract, Canyon Fuel Company, LLC,
SUFCO Mine, C/041/002, Task ID #1986

SUMMARY:

This Technical Memo addresses the hydrologic aspects of the Revised Notice of Intent to Conduct Minor Coal Exploration submitted to the Division by Ark Land Company on July 30, 2004. The application is for a helicopter-assisted wireline core-drilling project to be conducted on the Muddy Coal Tract, located in Sevier County, Utah. The six-hole exploration plan includes one hole to be drilled on the School and Institutional Trust Lands Administration (SITLA) portion of the Muddy Coal Tract. The remaining five holes are to be drilled on the Federal portion of the Muddy Coal Tract and are not included in this review. All exploration activities will occur on the U.S. Forest Service, Manti-LaSal National Forest surface.

The application was first submitted to the Division on February 12, 2004, and was assigned Task ID #1835. Items found deficient from the hydrologic review are outlined below:

R645-202-232 (R645-301-742.423), Provide additional information describing road repairs and potential modifications to surface drainage controls.

R645-202-235 (R645-301-731.121), Provide a drawing indicating the size of the disturbance necessary for the drill pad and its proximity relative to the Cowboy Creek stream channel. Identify the drainage from the drill site and treatment of surface runoff (whether in the drawing or in text).

R645-202-235 (R645-301-624.210), Text needs to commit to keeping geologic logs of the drilling and identify where any appreciable water is encountered, noting depth, geology, flow, etc. These areas will be evaluated for potential water monitoring well installation.

EXPLORATION TECHNICAL MEMO

R645-202-235 (R645-301-731.215), Provide additional information describing the well design. Upon completion of a groundwater monitoring well, a well completion form should be submitted to the Division.

R645-202-235, Provide a narrative of the treatment/disposal of water, in the event the drill holes begin making excess water.

R645-202-244.200, On the roads requiring repair, address how the newly disturbed areas will be reclaimed.

The hydrologic deficiencies have been adequately addressed in the revised application and no new deficiencies have been determined. The application should be approved.

EXPLORATION TECHNICAL ANALYSIS:

COMPLIANCE DUTIES

Regulatory Reference: 30 CFR 772.13; R645-202.

OPERATIONAL STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-100.

Analysis:

Roads

The project will not include any road construction. However, the repair of existing Forest Development Roads is anticipated to include "hauling of gravel to fill rough areas on bedrock ledges and grading rutted areas". The Division anticipates that surface drainage controls will not be adversely impacted during the road repair because the Permittee has committed to following the recommendations of the U.S. Forest Service as a response to Stipulation #5 of the Special Coal Lease Stipulations presented as Appendix A in the application.

Hydrologic Balance

According to the Spring and Seep survey conducted by Cirrus Environmental Solutions, L.C., in 2001, no springs or seeps are located in the vicinity of the proposed project. Figure 3 of the application shows the location of the drill site in relation to Cowboy Creek. According to the figure, the drill site disturbed area is to be 460 feet upslope of Cowboy Creek. The application states that there will be no diversion of overland flows and that all drilling fluids will be contained within portable tanks. Because of the handling of excess drilling fluids, overland flows, and the distance of the disturbed area from Cowboy Creek, it is expected that the potential for adverse impacts to the Cowboy Creek stream channel are negligible.

Because there are few groundwater-monitoring sites currently within the SITLA Lease area, if groundwater is encountered, the Division encourages the completion of the boring as a groundwater monitoring well to aid in the evaluation of groundwater conditions for future permitting. If any measurable groundwater is encountered during drilling, the depth, geology, and flow/head will be noted in the drill logs. In consultation with the Division, the conditions will be evaluated as a potential groundwater-monitoring well location prior to abandonment and reclamation of the boring.

The application states that if the boring were to be completed as a groundwater-monitoring well, a nominal 1.0- to 1.5-inch diameter well screen and steel casing would be installed to below the deepest mineable coal zone. A well design is shown on Figure 4 of the application. Because of the limitations of the heli-portable drilling equipment, an effective monitoring well may not be possible due to a small hole annulus limiting the effectiveness of sandpack placement. If a groundwater monitoring well is installed, a well completion form will be submitted to the Division in order to aid in the evaluation of data collected from the well.

During drilling of the exploration holes, any water necessary for drilling will be obtained from Quitcupah or Muddy Creeks. An approved "Temporary Change of Water" permit issued from the Division of Water Rights is included in the application as Appendix E. In the event the drill hole begins making excess water, the water will be stored in portable poly tanks for proper disposal.

Acid- or toxic-forming materials

Samples will be taken from the 10-foot interval above and below the Lower Hiawatha seam for analysis of acid- and toxic-forming materials. Any acid- or toxic-forming drill core not boxed for analysis will be removed from the drill site and disposed of at SUFCO Mine's permitted waste rock site. No drilling fluids or cuttings are to be disposed of at the drill site.

EXPLORATION TECHNICAL MEMO

Findings:

The Division considers the information adequate to meet the minimum requirements of the Hydrology section of the Operational Standards regulations.

RECLAMATION STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-200.

Analysis:

Revegetation

The project will not include any road construction. However, the repair of existing Forest Development Roads is anticipated to include "hauling of gravel to fill rough areas on bedrock ledges and grading rutted areas". The Division anticipates that surface drainage controls will not be adversely impacted during the road repair because the Permittee has committed to following the recommendations of the U.S. Forest Service as a response to Stipulation #5 of the Special Coal Lease Stipulations presented as Appendix A in the application. Therefore, the Division anticipates that no portion of the access roads or drainage controls will be in need of reclamation.

Borehole

The application makes a specific commitment of how the boring will be abandoned once exploration activities are complete in accordance with Federal and State Regulations. If the boring is not completed as a groundwater monitoring well, the boring will be plugged with cement, cement/bentonite slurry, or bentonite chips to their complete depth. Surface casings will either be removed or cut flush with the surface.

Findings:

The Division considers the information adequate to meet the minimum requirements of the Hydrology section of the Compliance Duties – Reclamation Standards regulations.

RECOMMENDATIONS:

The application should be approved.